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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,826	12/07/2001	Tomohiko Ito	Q66566	7762

7590 02/06/2007
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
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EXAMINER

THOMPSON, JAMES A

ART UNIT	PAPER NUMBER
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2625

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/004,826

Applicant(s)

ITO, TOMOHIKO

Examiner

James A. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 2-5, filed 16 January 2007, with respect to the rejection of claim 1 under 35 USC §102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new grounds of rejection are made in view of 35 USC §103(a), as set forth in detail below. Accordingly, the finality of the previous office action is withdrawn and prosecution on the merits is re-opened.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 8-9 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsubara (US Patent 5,712,666) in view of Wise (US Patent 5,809,884).

Regarding claim 1: Matsubara discloses an image recording apparatus (figure 44 and column 11, lines 53-55 of Matsubara) comprising an image drafting means (figure 7(34) of Matsubara) that drafts a line form image on a portion of a recording medium (column 12, lines 60-67 of Matsubara); a conveyance means ("driving means") that conveys said recording medium in a direction (Y direction) substantially perpendicular to the lengthwise direction (X direction) of said drafted line form image (column 12, lines 60-67 of Matsubara), wherein said image is recorded two-dimensionally on said recording medium by said conveyance means conveying said recording medium in said conveyance direction as said image drafting means drafts said line form image (figure 10 and column 12, lines 65-67 of Matsubara); and a detection means (figure 15(112-119,125) and column 16, lines 12-17 of Matsubara).

Matsubara does not disclose expressly that said detection means is fixedly positioned in relation to said conveyed recording medium.

Wise discloses a detection means (figure 2(32) of Wise) fixedly positioned in relation to a conveyed recording medium (figure 2(38) and column 3, lines 20-42 of Wise).

Matsubara and Wise are combinable because they are from the same field of endeavor, namely scanning, calibrating and printing image data in a digital image data printing system. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the teachings of Matsubara in the context of a continuous web printing system, as taught by Wise. Thus, the detection means taught by Matsubara would be fixedly positioned in relation to the conveyed recording medium. The suggestion for doing so would have been to improve a different type of printer system, in this case a continuous web printing system. Both Matsubara and Wise apply multiple printing elements [see, e.g., figure 47 of Matsubara (system applied to multiple color print heads) and figure 2(30,34) of Wise]. Therefore, it would have been obvious to combine Wise with Matsubara to obtain the invention as specified in claim 1.

Regarding claim 2: Matsubara discloses that said image drafting means as well as said conveyance means are provided within a housing (figure 44 and column 28, lines 41-43 of Matsubara), and an opening is provided in said housing in the vicinity of the aforementioned conveyance means, extending in said conveyance direction (figure 44(1009) of Matsubara). Figure 44 of Matsubara shows a typical opening for a printer (figure 4(1009) of Matsubara) where the printed paper is ejected, and is thus in the vicinity of the aforementioned conveyance means, extending in said conveyance direction.

Regarding claims 3 and 4: Matsubara discloses that said image drafting means is a thermal head (figure 17a(232) and column 17, line 65 to column 18, line 3 of Matsubara).

Regarding claims 5/1-5/4: Matsubara discloses that said conveyance means is capable of varying the conveyance speed of said recording medium (column 16, lines 1-11 of Matsubara). The distance, and thus the speed, of the recording medium depends upon the number of nozzles switched on. Thus, for a greater reduction in the number of nozzles used in the recording head, the slower the conveyance speed.

Regarding claims 6/1-6/4: Matsubara discloses recording a density pattern for shading correction on a recording medium (figure 10 and column 13, lines 34-42 of Matsubara); obtaining said recording medium on which said density pattern for shading correction has been recorded (column 13, line 65 to column 14, line 2 and column 14, lines 10-12 of Matsubara); conveying said recording medium having said density pattern recorded thereon in a direction that substantially matches the lengthwise direction of said density pattern (Y direction) (column 12, lines 60-67 of Matsubara); detecting said density pattern by a detection means (column 14, lines 10-14 of Matsubara); and obtaining shading correction data based on the detection result of said detection means (figure 9(S53) and column 14, lines 23-25 of Matsubara).

Regarding claim 8: Matsubara discloses providing a recording medium for recording an image (column 13, lines 34-38 of Matsubara); recording a density pattern on said recording medium (figure 10 and column 13, lines 34-42 of Matsubara); conveying said recording medium to move said density pattern (column 12, lines 60-67 of Matsubara) by a detector (figure 15 (112-119,125) and column 13, line 66 to column 14, line 5 of Matsubara); and detecting said density pattern with said detector (column 14, lines 10-14 of Matsubara) to obtain shading correction data (column 14, lines 23-25 of Matsubara).

Regarding claim 9: Matsubara discloses conveying said recording medium by a printer head to record an image on said recording medium corrected by the obtained shading correction data (column 13, line 66 to column 14, line 9 of Matsubara).

Regarding claim 12: Matsubara discloses that the recording medium is conveyed in a first direction for detecting said density pattern which is different than a second direction in which said recording medium is conveyed when said image is recorded (column 14, lines 2-7 of Matsubara). The test pattern is positioned such that it is read at right angles to the direction in which it was recorded (column 14, lines 2-7 of Matsubara). Thus, when said recording medium is read, said recording medium is conveyed at a direction perpendicular to that which said recording medium was conveyed when the test pattern was printed.

Regarding claims 13-14: Matsubara does not disclose expressly that the detection means is disposed adjacent to the drafting means and upstream of the drafting means in relation to the conveyance means, wherein the detection means is immediately adjacent to the drafting means.

Wise discloses detection means (figure 2(32) of Wise) that is disposed adjacent to drafting means (figure 2(30) of Wise) and upstream of the drafting means in relation to the conveyance means, wherein the detection means is immediately adjacent to the drafting means (column 3, lines 20-42 of Wise).

Matsubara and Wise are combinable because they are from the same field of endeavor, namely scanning, calibrating and printing image data in a digital image data printing system. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically dispose the detection means immediately adjacent to and upstream of the drafting means. The motivation for doing so would have been to decrease the amount of time required for calibration and processing by allowing the image patch reading to occur nearly simultaneously with the image patch printing. Therefore, it would have been obvious to combine Wise with Matsubara to obtain the invention as specified in claims 13-14.

Regarding claim 15: Matsubara discloses that the image drafting means drafts a corrected line image based on a detecting of the detections means (column 15, lines 46-49 and column 16, lines 24-36 of Matsubara).

4. Claims 7 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsubara (US Patent 5,712,666) in view of Wise (US Patent 5,809,884) and Rolleston (US Patent 5,416,613).

Regarding claim 7: Matsubara discloses recording a density pattern for shading correction on a recording medium (figure 10 and column 13, lines 34-42 of Matsubara); obtaining said recording medium on which said density pattern for shading correction has been recorded (column 13, line 65 to column 14, line 2 and column 14, lines 10-12 of Matsubara); conveying said recording medium having said density pattern recorded thereon in a direction that substantially matches the lengthwise direction of said density pattern (Y direction) (column 12, lines 60-67 of Matsubara); detecting said density pattern by a detection means (column 14, lines 10-14 of Matsubara); obtaining shading correction data based on the detection result of said detection means (figure 9(S53) and column 14, lines 23-25 of Matsubara); and varying the conveyance speed of said recording medium (column 16, lines 1-11 of Matsubara). The distance, and thus the speed, of the recording medium depends upon the number of nozzles switched on. Thus, for a greater reduction in the number of nozzles used in the recording head, the slower the conveyance speed.

Matsubara in view of Wise does not disclose expressly that said step of conveying is performed at a speed slower than the speed at which said density pattern was recorded.

Rolleston discloses that, after a large plurality (column 5, lines 50-59 of Rolleston) of color correction patches are printed (figure 2 and column 5, lines 39-50 of Rolleston), said color correction patches are carefully and individually read by a densitometer to generate a three-dimensional look-up table (column 5, lines 62-67 of Rolleston). Thus, the reading of said color correction patches is clearly a slower operation than the printing of said color correction patches.

Matsubara in view of Wise is combinable with Rolleston because they are from the same field of endeavor, namely color and shading correction of printed digital image data through printing and scanning a plurality of test patches. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to carefully scan the printed correction patches with a densitometer, as taught by Rolleston. Thus, the scanning would be performed more slowly than the printing, so the step of conveying taught by Matsubara is performed at a speed slower than the speed at which said density pattern was recorded. The motivation for doing so would have been to provide for high accuracy

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measuring of colorimetric response (column 2, line 64 to column 3, line 4 of Rolleston). Furthermore, by performing high accuracy colorimetric measurements over the whole recording medium, color variations that are caused by spatial non-uniformities can be corrected, rather than falsely assuming that color variations are due to color space non-uniformities, thus improving the overall response of the printer (column 3, lines 4-15 of Rolleston). Therefore, it would have been obvious to combine Rolleston with Matsubara in view of Wise to obtain the invention as specified in claim 7.

Regarding claims 10-11: Matsubara discloses varying the conveyance speed of said recording medium (column 16, lines 1-11 of Matsubara). The distance, and thus the speed, of the recording medium depends upon the number of nozzles switched on. Thus, for a greater reduction in the number of nozzles used in the recording head, the slower the conveyance speed.

Matsubara in view of Wise does not disclose expressly that said recording medium is conveyed at a first speed when said density pattern is being detected and a second speed when said image is recorded, wherein a said first speed is slower than said second speed.

Rolleston discloses that, after a large plurality (column 5, lines 50-59 of Rolleston) of color correction patches are printed (figure 2 and column 5, lines 39-50 of Rolleston), said color correction patches are carefully and individually read by a densitometer to generate a three-dimensional look-up table (column 5, lines 62-67 of Rolleston). Thus, the reading of said color correction patches is clearly a slower operation than the printing of said color correction patches.

Matsubara in view of Wise is combinable with Rolleston because they are from the same field of endeavor, namely color and shading correction of printed digital image data through printing and scanning a plurality of test patches. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to carefully scan the printed correction patches with a densitometer, as taught by Rolleston. Thus, the scanning would be performed more slowly than the printing, so said recording medium would be conveyed, as taught by Matsubara, at a first speed when said density pattern is being detected and a second speed when said image is recorded, wherein a said first speed is slower than said second speed, as taught by Rolleston. The motivation for doing so would have been to provide for high accuracy measuring of colorimetric response (column 2, line 64 to column 3, line 4 of Rolleston). Furthermore, by performing high accuracy colorimetric measurements over the whole recording medium, color variations that are caused by spatial non-uniformities can be corrected, rather than falsely assuming that color variations are due to color space non-uniformities, thus improving the overall response of the printer (column 3, lines 4-15 of Rolleston). Therefore, it would have been obvious to combine Rolleston with Matsubara in view of Wise to obtain the invention as specified in claims 10-11.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



01 February 2007

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